

## Mobius strip practical.

You will need :

A pen or Pencil

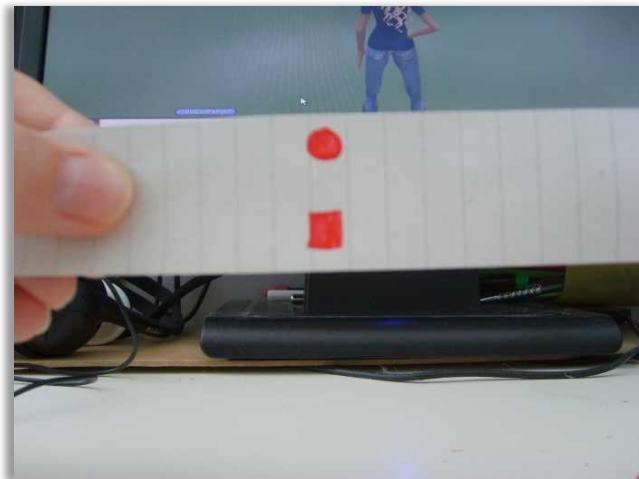
An A4 sheet of paper

Sellotape

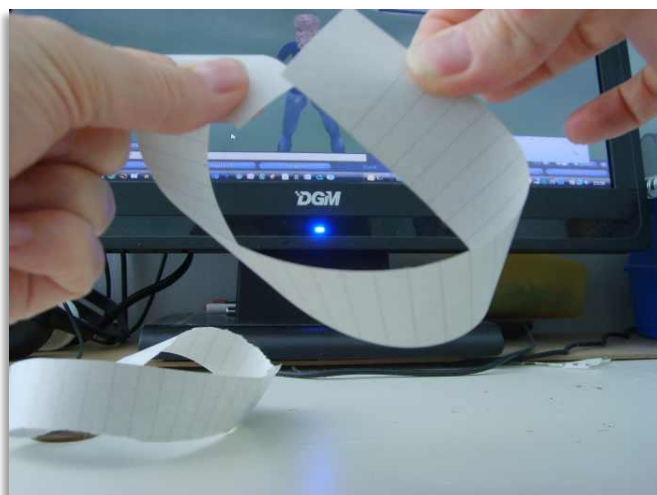
Scissors

Cute a strip off the A4 sheet along it's longest length about 3cm wide.

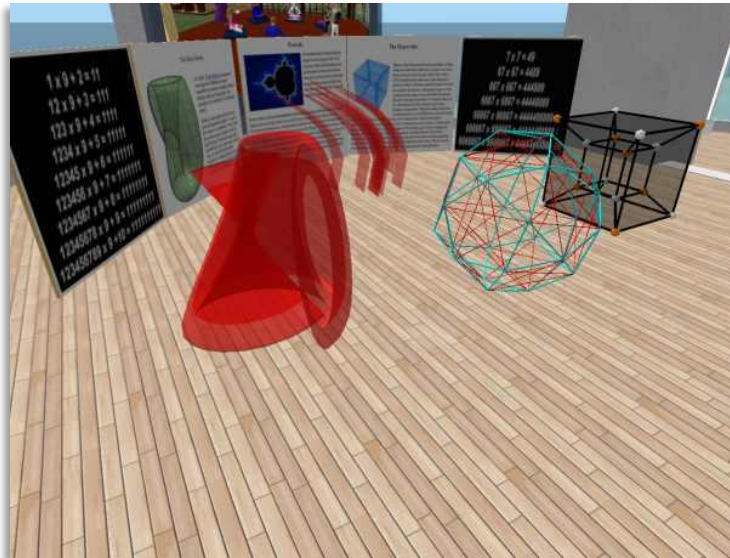
On one side of the strip, mark a DOT and a SQUARE with the pen/pencil as shown.



Bring the ends together and make a twist of half a turn at one end :



Tape the ends together with the sellotape. Think now about the topology of the paper. Can you say how many sides the paper had before you taped it together? How many does it have now? Investigate this by placing a finger on one side and the thumb on the other. Rotate the loop. Do this before reading on.



You will find the dot and square you marked will run under both the Finger and the thumb! This indicates the paper now has only ONE side.

If we cut the loop, how many sides will it then have? What will happen to the Dot and Square?

Cut the loop as shown, right along its length:



Did what you thought would happen actually happen? You will end up with still one loop but now it is twice as big. Use the same technique as before to investigate the number of sides it has. You will find that the dot and square are now on opposite sides and also they are separated by half a loop's length.

See if you can repeat what Lambchop did to get the following structure (Two interlinked loops, one half the size of the other. What happens to the dot and square in this instance?:

